



## Dr. Ed McGrady

This first panel focuses on a very interesting, and in my view an extremely important, topic as we think about how to prepare the maritime services for climate change. In particular, the panel will discuss the strategy, policy, and operational implications of climate change for the maritime services. I think each of those words

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*Dr. Ed McGrady is a senior research analyst at CNA. He develops games and conducts studies on a wide range of topics from force structure and planning to operational deployment of medical forces. He is currently working on projects related to the effect of climate change on U.S. military involvement in humanitarian operations and disaster response. His research work includes studies of humanitarian emergencies, disaster response operations, the role of Naval and other military forces in medical humanitarian missions, cooperation between military forces and nongovernmental organizations, and the role of military forces in domestic disaster response. He has led studies examining recent hospital ship deployments including the tsunami relief efforts and follow-on humanitarian medical assistance operations in the Pacific. During the Katrina response, he led a group of 10 analysts in examining the full spectrum of disaster response operations, from military support to civil authorities to internal Navy disaster response. He has also examined the role of military forces in complex emergencies, such as during the U.S. intervention in Haiti. As part of that effort, he deployed with U.S. forces onboard the USS Enterprise. Dr. McGrady has written extensively on the role of military forces in humanitarian and disaster response operations. He has authored papers on such diverse topics as the role of Naval forces in providing emergency communications support, the impact of these operations on national security objectives, and type of emergencies that military forces typically get called on to support. Dr. McGrady holds a B.A. in chemical engineering from the University of Florida and a Ph.D. in chemical engineering from the University of Michigan.*

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is very important. We are going to be looking at strategy, policy, and operations. Those are not topics that we typically focus on when we think about how climate change is going to impact how our forces operate, what we are going to have to do, and what we are going to have to buy, so we want to try to dig into some of those issues.

We also want to emphasize the maritime services. Many of the missions that are typically assigned to these services are going to be affected by climate change, and the services are going to have to adapt accordingly. Rising sea levels will displace bases, and the opening of the Arctic will require new deployments of Coast Guard and Navy forces. Climate-induced instabilities around the world will increase the number of humanitarian assistance and disaster response missions as well as peacekeeping and perhaps even counter-insurgency missions. How are such changes going to affect the maritime services, and how should we adapt our strategy, our policy, and our operations to deal with them?

From the above discussion, it seems clear that the Navy will be impacted by climate change. In my view, however, it is the Coast Guard that is currently charged with much of the mission set that our other maritime forces will need to do more of in a world adapting to climate change. The Coast Guard is an interagency organization in that it has to work with a wide variety of the other agencies in an interagency environment. In addition, the Coast Guard has law enforcement responsibilities, both on the domestic side as well as overseas in working with naval partners to provide on-ship capabilities. The kind of challenges that the Coast Guard currently confronts may end up being issues that all of our maritime forces have to deal with in the future as increased stresses from climate change impose new requirements and new missions.

To discuss these issues, we have assembled a very representative panel in terms of both strategy and operations. Their charge is to try to help us understand how our maritime forces should adapt their strategy and operations to climate change.